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BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of Illinois

UNITED STATES DEPARTMENT OF THE INTERIOR

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UNITED STATES DEPARTMENT OF THE INTERIOR • Manuel J. Lujan, Jr., Secretary

BUREAU OF MINES • T S Ary, Director

This publication is a chapter from the current Bureau of Mines Minerals Yearbook, comprising *Volume I, Metals and Minerals; Volume II, Area Reports: Domestic; Volume III, Area Reports: International.* The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, D.C. 20402.

The Mineral Industry of Illinois

This chapter has been prepared under a Memorandum of Understanding between the Bureau of Mines, U.S. Department of the Interior, and the State Geological Survey Division, Illinois Department of Energy and Natural Resources, for collecting information on all nonfuel minerals.

By James J. Hill[1]

Nonfuel mineral production in Illinois was valued at $517.2 million in 1987, a 10% increase over that of 1986. Nationally, the State ranked 17th in value of nonfuel mineral production. Illinois led the Nation in production of fluorspar, industrial sand, and tripoli. Crushed stone continued to be the State's leading nonfuel mineral commodity in terms of value, followed by construction sand and gravel, portland cement, industrial sand, and lime. Production declined for common clays, fluorspar, dimension stone, tripoli, and the byproducts of fluorspar—copper lead, and zinc. Output increased for all other commodities except gem stones, the value of which was estimated to have remained the same as in 1986.

Table 1.—Nonfuel mineral production in Illinois[1]

Mineral	1985		1986		1987	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) thousand short tons	2,101	$86,211	2,118	$83,783	2,119	$86,210
Clays[2] do.	265	876	283	1,092	233	977
Gem stones	NA	e15	NA	15	NA	15
Sand and gravel:						
Construction thousand short tons	e26,600	e77,000	27,867	82,523	e28,300	e93,300
Industrial do.	4,956	56,915	4,039	52,133	4,346	45,547
Stone:						
Crushed do.	41,044	164,117	e44,200	e179,600	52,102	216,212
Dimension do.	2	107	e2	e107	W	W
Combined value of barite (1985), cement (masonry), clays (fuller's earth), copper, fluorspar, lead, lime, peat, silver, tripoli, zinc, and value indicated by symbol W	XX	74,679	XX	70,272	XX	74,945
Total	XX	459,920	XX	469,525	XX	517,206

eEstimated. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]Excludes certain clays; kind and value included with "Combined value" data.

Table 2.—Nonfuel minerals produced in Illinois in 1986, by county[1]

County	Minerals produced in order of value
Adams	Sand and gravel (construction).
Alexander	Sand (industrial), tripoli.
Bond	Sand and gravel (construction), clays.
Boone	Sand and gravel (construction).
Bureau	Do.
Champaign	Do.
Clark	Do.
Clinton	Do.
Coles	Do.
Cook	Lime, sand and gravel (construction), peat.
Crawford	Sand and gravel (construction).
Cumberland	Do.
De Kalb	Do.
De Witt	Do.
Du Page	Do.
Effingham	Do.
Fayette	Do.
Ford	Do.
Fulton	Do.
Gallatin	Do.
Grundy	Do.
Hardin	Fluorspar, zinc, lead, copper, silver.
Henderson	Sand and gravel (construction).
Henry	Do.
Jackson	Do.
Jo Daviess	Do.
Kane	Do.
Kankakee	Sand and gravel (construction), clays.
Kendall	Sand and gravel (construction).
Knox	Do.
Lake	Sand and gravel (construction), peat.
La Salle	Sand (industrial), cement, sand and gravel (construction), clays.
Lawrence	Sand and gravel (contruction).
Lee	Cement.
Livingston	Clays, sand and gravel (construction).
Logan	Sand and gravel (construction).
McHenry	Do.
McLean	Do.
Macon	Do.
Madison	Do.
Marshall	Do.
Mason	Sand (industrial), sand and gravel (construction).
Massac	Cement, sand and gravel (construction).
Moultrie	Sand and gravel (construction).
Ogle	Sand (industrial).
Peoria	Sand and gravel (construction).
Piatt	Do.
Pike	Do.
Pulaski	Clays, sand and gravel (construction).
Putnam	Sand and gravel (construction).
Randolph	Do.
Rock Island	Do.
St. Clair	Do.
Sangamon	Do.
Schuyler	Do.
Stephenson	Do.
Tazewell	Do.
Vermilion	Do.
Wabash	Do.
White	Do.
Whiteside	Peat, sand and gravel (construction).
Will	Sand and gravel (construction).
Winnebago	Do.
Woodford	Do.
Undistributed[2]	Stone (crushed and dimension), gem stones.

[1]No production of nonfuel mineral commodities was reported for counties not listed.
[2]Data not available by county for minerals listed.

Employment.—The Illinois Department of Economic Security reported the State's total civilian work force averaged nearly 5.8 million in 1987. Unemployment in the State averaged 7.4%. Employment in mining and quarrying, which included coal mining and oil and gas extraction, totaled 23,900 persons, down about 4% from employment in 1986. Wages averaged $15.44 per hour, and workers averaged 39.3 hours per work week. Employment in the basic steel industry averaged 24,200 persons, a drop of about 4% when compared with that of 1986. Wages averaged $13.72 per hour, and steelworkers put in 44.4 hours in an average work week.

Several work stoppages were reported during 1987. The longest strike (6 months), involving 750 workers at USX Corp.'s South Works plant in Chicago, ended January 31,

1987. Contract agreements were reached with workers at Bethlehem Rebar Industries in Bedford Park, a manufacturer of reinforcing bars, and Pittsburgh International in Fairbury, a manufacturer of welded steel and drawn tubing. Strikes also were resolved at the John Deere foundry in East Moline and the John Westwick foundry in Galena. In the industrial minerals sector, union workers ratified new contracts at the Livingston Stone Co. and the Vulcan Materials Co. operations in Pontiac, ending a 26-day walkout.

Exploration Activities.—According to the Illinois State Geological Survey (ISGS), exploration for nonfuel minerals was slow during the year. Some interest was expressed in resources of construction aggregate and high calcium limestone in the central part of the State. Ozark-Mahoning Co. operated two diamond-drilling units in connection with further development of its Annabel Lee fluorspar mine in Hardin County. Also, Tammsco and Illinois Minerals Co. operated drill rigs in the Southern Illinois tripoli district in Alexander County. Illinois Minerals Co. sought permits to explore 6,000 acres within the Shawnee National Forest for tripoli deposits.[2]

Legislation and Government Programs.—Two mineral-related bills were enacted into law during 1987. Public Act 289 designated November 13 of each year as a Coal Miners Memorial Day to be observed throughout the State in remembrance of coal miners who gave their lives while working in the mines. Public Act 292 increased the limits of loans obtained from public funds to industry for projects utilizing Illinois coal under the State's Industrial Coal Utilization Program. Under the act, industries may now obtain loans of up to $4 million or 60% of a total project cost, whichever is less. Previously, loans were limited to $2.5 million or 25% of a project's cost.

During the year, the ISGS completed several geotechnical investigations related to the Illinois bid to become the site for the Superconducting Super Collider, a high-energy physics facility proposed by the U.S. Department of Energy. In May, the ISGS hosted the 23d Forum on the Geology of Industrial Minerals in Aurora. Topics of discussion included (1) the future of industrial clays in Illinois, (2) the underground limestone and dolomite resources in central Illinois, (3) the markets for construction aggregates in the Chicago area, and (4) a historical perspective of Chicago's stone industry. Also, ISGS continued research on the effects of subsidence in Illinois coal mine areas under a long-term cooperative agreement with the U.S. Bureau of Mines.

The Northwestern University Steel Resource Center, funded by the American Iron and Steel Institute, studied ways in which computer programs can cut costs and improve quality in continuous casting, improvements in zinc-electroplated steel, and opportunities to use computer-based automation and information systems in steel manufacture.

The U.S. Bureau of Mines distributed over $707,000 in contracts and grants to Illinois firms, contractors, and research institutions in fiscal year 1987. Of this total, $100,000 was distributed to the University of Illinois for cooperative investigations of subsidence in Illinois. Southern Illinois University at Carbondale, the State's Mining and Mineral Resources and Research Institute, received $138,000 as its basic grant under Public Law 98-409 for training engineers and scientists in mineral-related disciplines.

REVIEW BY NONFUEL MINERAL COMMODITIES

INDUSTRIAL MINERALS

Cement.—In terms of value, cement was the third-leading nonfuel mineral commodity produced in the State, following crushed stone and construction sand and gravel. Masonry cement sales increased by over 60% during 1987; portland cement sales remained essentially the same as in 1986. Four companies operated dry process plants in La Salle, Lee, and Massac Counties with seven of eight kilns in operation at some time during the year. Sales of masonry cement were reported by all companies except one. All companies produced gray portland Types I and II, general use and moderate heat, and three companies produced Type III, high-early-strength. Cement sales were to ready-mixed concrete companies (83%), highway contractors (9%), and concrete product manufacturers (6%). Lesser quantities were sold to other contractors, building material dealers, and miscellaneous customers. Most of the State's cement was shipped to consumers by truck in bulk form.

Approximately 2.9 million short tons of raw materials was consumed in the manu-

facture of cement, including 2.5 million tons of limestone, 120,000 tons of clinker, 96,000 tons of clay and shale, 75,000 tons of gypsum, and lesser quantities of bauxite, fly ash, mill scale, sand, and slag.

Cement shipments to and within Illinois totaled 3.5 million tons of portland cement and 96,000 tons of masonry cement. Compared with 1986 figures, this was an increase of 221,000 tons of portland cement and 7,000 tons of masonry cement. Nearly 58% of the total shipments was to the Chicago metropolitan area.

In June, the Missouri Portland Cement Co. plant at Joppa reopened when one of its two kilns was put on-stream because of the improved outlook in cement demand. Previously, the facility had been used as a distribution center supplied by Davenport Cement Co.'s plant in Davenport, IA, and foreign imports.

Clays.—Six companies reported production of common clay and shale in Bond, Kankakee, La Salle, and Livingston Counties. Output dropped by about 50,000 short tons during 1987 because lesser quantities were used in cement manufacture. Value of production dropped about 10%. Most of the State's clay production was consumed in the manufacture of common and face brick followed by cement and drain tile. Fuller's earth was produced by two companies with operations in Pulaski County. The clay was used in the manufacture of absorbents for pet waste and oil and grease. Production and attendant value increased 15% and 31%, respectively.

USG Corp. of Chicago announced that it would spin off its A. P. Green Refractories Co. unit to shareholders in the first quarter of 1988 after a planned sale to another company failed early in the year because of financing obstacles. The A. P. Green unit operated a plant at Morris that produced refractory products for the cement and steel industries.

Fluorspar.—Illinois continued to lead the Nation in fluorspar production, accounting for over 90% of all U.S. shipments. Production and attendant value declined 9% and 6%, respectively, from 1986 levels. Ozark-Mahoning, the Nation's leading producer, operated two mines and a flotation plant in Hardin and Pope Counties and shipped acid-grade and metallurgical-grade fluorspar to the chemical and steel industries. Hastie Trucking & Mining Co. also shipped metallurgical grade fluorspar for making steel from its operation near Cave In Rock, Hardin County. Inverness Mining Co., a former producer, dried imported fluorspar at its facilities near Cave In Rock for sale primarily to the ceramics industry.

In August, a new 3-year agreement was reached between Ozark-Mahoning and members of the International Association of Machinists and Aerospace Workers Union. Also, Ozark-Mahoning began negotiating with Inverness Mining Co. to purchase its Minerva No. 1 Mine and related assets near Cave In Rock.

Lime.—Illinois ranked seventh of 34 States in lime production. Output and attendant value increased 7% and 3%, respectively, during the year. All production was at three Cook County plants. Marblehead Lime Co. operated plants at South Chicago and Thornton, and Vulcan Materials operated a plant at McCook. Production was primarily quicklime although a small amount of hydrated lime was also manufactured. Lime sales were mainly to the steel industry.

Illinois lime consumption, from all domestic sources, totaled 507,000 short tons of quicklime and 99,000 tons of hydrate. This was a slight increase over the 491,000 tons of quicklime consumed in 1986. However, hydrated lime consumption dropped 34,000 tons below the 1986 figure.

Peat.—Illinois ranked third of 22 States in peat sales. Quantity and value of sales increased 6% and 8%, respectively, in 1987. Five companies produced peat in Cook, Lake, and Whiteside Counties. Most of the peat was reed-sedge, with lesser amounts of humus, hypnum, and sphagnum. In descending order of use, sales were for general soil improvement, golf courses, vegetable growing, mushroom beds, and earthworm culture. Most of the sales were in packaged form.

Sand and Gravel.—*Construction.*—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only; this chapter contains actual data for 1986 and estimates for 1985 and 1987. Data for odd-numbered years are based on annual company estimates.

Illinois ranked eighth of 50 States in production of sand and gravel for construction purposes. In terms of value, construction sand and gravel was the second-leading mineral commodity produced in the State, following crushed stone. Sales were estimated to have increased slightly in 1987, climbing to about 28.3 million short tons. Value of sales was estimated at $93.3 mil-

lion, an increase of 13%.

Industrial.—Illinois ranked first of 39 States in industrial sand production. Sales increased nearly 8% to about 4.3 million short tons. Value of sales dropped by nearly 13%. Five companies produced silica sand from eight pits in La Salle, Mason, and Ogle Counties. La Salle County led the State's production. Most of the sand was shipped to consumers by rail, with lesser quantities by truck and barge. About 42% of the sand was sold for the manufacture of glass containers and flat glass. Sales for foundry molding and core were nearly 27% of total sales. Sand ground for fillers commanded the highest price per short ton.

Effective January 1, Ottawa Silica Co. of Ottawa, IL, and Pennsylvania Glass Sand Corp. of Berkeley Springs, WV, were merged and became U.S. Silica Co., the Nation's largest industrial sand producer. Both companies had been acquired in recent years by Pacific Coast Resources Co., a subsidiary of Rio Tinto Zinc Corp. PLC, a British firm.

Stone.—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only; this chapter contains actual data for 1985 and 1987 and estimates for 1986. Data for even-numbered years are based on annual company estimates.

Crushed.—Illinois ranked seventh of 49 States in crushed stone production. Output and attendant value increased 18% and 20%, respectively, during 1987. Crushed stone was produced by 106 companies at 199 quarries in 53 of the State's 102 counties. All production was limestone and dolomite except for 66,000 short tons of sandstone produced at a Hardin County quarry. Cook County led the State in production, followed by Will, St. Clair, La Salle, and Hardin Counties. Stephenson and Winnebago Counties had the greatest number of active quarries with 14 each. Nationally, Vulcan Materials' McCook Quarry and Material Service Corp.'s Thornton Quarry, both in Cook County, ranked fourth and eighth, respectively, in total output.

In 1985, the U.S. Bureau of Mines began compiling crushed stone statistics by districts for some States. Table 4 presents end-use data for crushed stone produced in the four Illinois districts depicted in figure 1.

Table 3.—Illinois: Crushed stone[1] sold or used by producers in 1987, by use

(Thousand short tons and thousand dollars)

Use	Quantity	Value
Coarse aggregates (+1-1/2 inch):		
Macadam	751	3,072
Riprap and jetty stone	677	3,836
Filter stone	104	418
Coarse aggregate, graded:		
Concrete aggregate, coarse	4,768	18,887
Bituminous aggregate, coarse	3,940	17,685
Bituminous surface-treatment aggregate	1,778	9,170
Railroad ballast	575	2,331
Fine aggregate (-3/8 inch):		
Stone sand, concrete	201	874
Stone sand, bituminous mix or seal	302	1,230
Screenings, undesignated	980	3,548
Coarse and fine aggregates:		
Graded road base or subbase	12,295	44,314
Unpaved road surfacing	3,150	11,474
Crusher run or fill or waste	468	1,653
Other construction[2]	332	1,181
Agricultural: Agricultural limestone	4,602	16,002
Chemical and metallurgical: Cement manufacture	1,762	4,999
Special:		
Mine dusting and acid water treatment	121	412
Other fillers or extenders	587	17,456
Other miscellaneous[3]	1,338	5,675
Other unspecified[4]	13,372	51,996
Total[5]	52,102	216,212

[1]Includes limestone, dolomite, and sandstone.
[2]Includes fine aggregate and terrazzo and exposed aggregate.
[3]Includes poultry grit and mineral food, other agricultural uses, lime manufacture, flux stone, asphalt fillers or extenders, and roofing granules.
[4]Includes production reported without a breakdown by end use and estimates for nonrespondents.
[5]Data may not add to totals shown because of independent rounding.

Table 4.—Illinois:[1] Crushed stone sold or used by producers in 1987, by use and district

(Thousand short tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Coarse aggregate (+1-1/2 inch)[2]	731	3,953	311	1,170	194	1,013	295	1,191
Coarse aggregate, graded[3]	6,164	25,679	819	5,144	1,940	9,288	2,138	7,962
Fine aggregate (-3/8 inch)[4]	1,149	4,279	34	W	138	W	162	679
Coarse and fine aggregates[5]	8,938	31,574	1,918	7,215	1,879	7,747	3,223	11,104
Other construction	24	69	47	299	18	619	178	622
Agricultural[6]	697	2,151	795	2,782	1,277	6,124	1,868	5,306
Chemical and metallurgical[7]	(8)	(8)	--	--	(8)	(8)	(8)	(8)
Special[9]	--	--	(8)	(8)	(8)	(8)	283	881
Other miscellaneous	1,025	3,282	569	17,878	1,454	4,673	402	1,463
Other unspecified[10]	10,072	37,561	1,067	4,813	1,257	5,534	975	4,088
Total[11]	28,801	108,549	5,560	39,300	8,198	34,997	9,524	33,297

W Withheld to avoid disclosing company proprietary data; included with "Other construction."

[1]Excludes 20,000 short tons valued at $70,000 not reported by county.

[2]Includes macadam, riprap and jetty stone, and filter stone.

[3]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.

[4]Includes stone sand (concrete), stone sand (bituminous mix or seal), and fine aggregate (screenings).

[5]Includes graded road base or subbase, unpaved road surfacing, terrazzo and exposed aggregate, and crusher run or fill or waste.

[6]Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

[7]Includes cement manufacture, lime manufacture, and flux stone.

[8]Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous."

[9]Includes mine dusting, asphalt filler, other fillers or extenders, and roofing granules.

[10]Includes production reported without a breakdown by end use and estimates for nonrespondents.

[11]Data may not add to totals shown because of independent rounding.

One of Dravo Corp.'s operating units, Dravo Basic Materials Co. Inc., leased the former Missouri Portland Cement quarry near Cave In Rock and began operations in April. The quarry was closed in March 1986 when the Missouri Portland Cement plant at Joppa ceased production. Dravo began supplying stone to the cement plant when it was reopened in June.

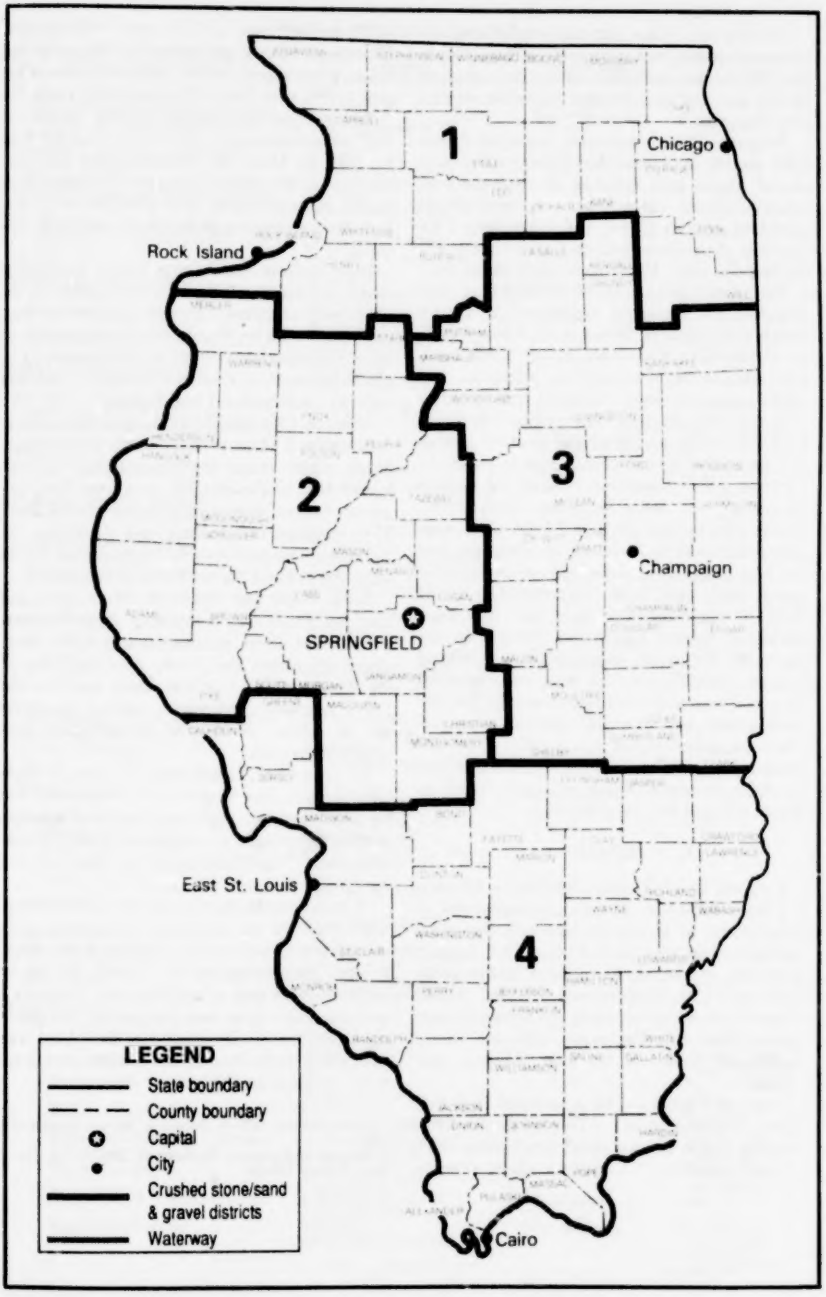

Figure 1.—Aggregate-producing districts in Illinois.

Dimension.—One company produced dimension stone from a quarry in Kane County. Products included irregular shaped stone, and cut and dressed stone for veneer and flagging.

Tripoli.—Two companies operated mines and plants in Alexander County that produced crude and finished amorphous (microcrystalline) silica that was used as an abrasive and as fillers and extenders. Production of crude tripoli declined nearly 5% during the year. Value increased about 5%.

Other.—Gypsum mined in Michigan was calcined by National Gypsum Co. at its wallboard plant in Waukegan, Lake County. Production was down about 1,000 tons, attendant value declined 5%. Finished iron oxide pigments were manufactured in three counties. Production and value declined slightly. Crude perlite mined in other States was expanded by two companies at plants in Cook and Will Counties. Production declined about 1%; value increased nearly 9%. Three companies processed iron and steel slag from steel mills in Alton, Chicago, and Granite City. Total sales and value declined about 14% and 11%, respectively. About 58% of the slag was sold as road base material. Lesser quantities were sold for asphaltic concrete, mineral wool, railroad ballast, and fill. Sulfur was recovered at four refineries. Sales totaled nearly 256,000 metric tons, valued at $26 million. Vermiculite from other States was exfoliated by two companies with operations in Du Page and La Salle Counties. Sales and value were up about 8% and 3%, respectively.

METALS

Copper, Lead, Silver, and Zinc.—All metals from mines in Illinois are recovered as byproducts at Ozark-Mahoning's fluorspar operations in Hardin County. Lead, copper, and zinc recoveries were down about 30%, 19%, and 15%, respectively, in 1987. Silver recovery rose significantly. In terms of total value, zinc was the most valuable metal recovered, followed by lead, copper, and silver.

Iron and Steel.—The American Iron and Steel Institute reported Illinois as the fifth-leading State in raw steel production with output reaching 7.1 million short tons in 1987, an increase of 11% over 1986 output. The State ranked seventh of 10 States in pig iron production with output increasing nearly 8% over that of the previous year.

Acme Steel Co. posted its first profit in 1987 after being spun off from Interlake Inc. in 1986. In May, the firm acquired Universal Tool & Stamping Co. Inc. of Butler, IN, a major manufacturer and distributor of automotive and truck jacks, as a market for its steel.

Birmingham Steel Corp. began installing state-of-the-art rolling mill equipment at its plant in Kankakee. The new equipment was expected to be on line in the first quarter of 1988. Birmingham Steel is the largest U.S. manufacturer of steel roof support systems used in underground coal mining.

Granite City Div. of National Steel Corp. relined its B blast furnace early in the year. Steel slabs from National Steel's Great Lakes Div. at Ecorse, MI, and from European producers were shipped to Granite City. This enabled the rolling and finishing departments to continue full production while only the A blast furnace was in operation.

Both Keystone Steel & Wire Co. and Laclede Steel Co. completed improvement projects at their plants during 1987. Keystone upgraded the production facilities at its Peoria plant. Laclede Steel modernized the six-strand continuous casting machine at its Alton plant and installed a new breakdown mill.

In November, Northwestern Steel & Wire Co. became the object of a takeover bid by management and the company's union workers through an employee stock ownership plan. Negotiations on the takeover bid continued through yearend.

A nationwide strike against USX Corp. was resolved on January 31, ending a 6-month shutdown of its steelmaking operations. Employees at the South Works in Chicago were called back in early February, and the first steel was poured at the plant on February 16. By midyear, the plant was operating at its former level with nearly all workers back on the job.

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[1]State Mineral Officer, Bureau of Mines, Minneapolis, MN.

[2]Mining Engineering. Exploration 1987. V. 40, No. 5, May 1988, pp. 322-323.

Table 5.—Principal producers

Commodity and company	Address	Type of activity	County
Cement:			
Dixon-Marquette Cement Inc., a subsidiary of Prairie Materials Sales Inc.	6428 Joliet Rd. Countryside, IL 60525	Quarry and plant	Lee.
Illinois Cement Co., a subsidiary of Centex Corp.	Box 442 La Salle, IL 61301	Quarry, clay pit, plant.	La Salle.
Lone Star Industries Inc., Cement and Construction Materials Group.	1 Greenwich Plaza Box 5050 Greenwich, CT 06836	do	Do.
Missouri Portland Cement Co., a division of Cementia Holdings AG.	Box 4288 Davenport, IA 52801	Plant	Massac.
Do	do	Quarry	Hardin.
Clays:			
Absorbent Clay Products Co.	Box 120 Anna, IL 62906	Pit and plant	Pulaski.
Lowe's Southern Clay Inc	348 South Columbia South Bend, IN 46624	do	Do.
Richards Brick Co	234 Springer Ave. Edwardsville, IL 62025	do	Bond.
Streator Brick Systems Inc	West 9th St. Streator, IL 61364	do	Livingston.
Fluorspar:			
Hastie Trucking & Mining Co.	Cave In Rock, IL 62919	Open pit	Hardin.
Ozark-Mahoning Co. a subsidiary of Pennwalt Corp.[1]	Box 57 Rosiclare, IL 62982	Underground mines and plant.	Hardin and Pope.
Gypsum (calcined):			
National Gypsum Co	2001 Rexford Rd. Charlotte, NC 28211	Plant	Lake.
Iron oxide pigments (finished):			
Pfizer Pigments Inc.	235 East 42d St. New York, NY 10017	do	St. Clair.
Prince Manufacturing Co	700 Lehigh St. Bowmanstown, PA 18030	do	Adams.
Solomon Grind-Chem Service Inc	Box 1766 Springfield, IL 62705	do	Sangamon.
Iron and steel:			
Acme Steel Co	13500 South Perry Ave. Riverdale, IL 60627	do	Cook.
Granite City Div. of National Steel Corp.	Box 365 Granite City, IL 62041	Iron and steel furnaces.	Madison.
LTV Steel Co.	1641 GH Republic Bldg. Cleveland, OH 44101	do	Cook.
Lime:			
Marblehead Lime Co., a subsidiary of General Dynamics Corp.	222 North LaSalle St. Chicago, IL 60601	Plants	Do.
Vulcan Materials Co	Box 7497 Birmingham, AL 35253	Plant	Do.
Peat:			
Henry Frenzer Inc	620 Webster St. Algonquin, IL 60102	Bog and plant	Do.
Joseph W. Grenus Excavating & Trucking.	39346 North Highway 83 Lake Villa, IL 60046	do	Lake.
Hyponex Corp	2013 South Anthony Blvd. Fort Wayne, IN 46803	do	Whiteside.
Markman Peat Co.	Route 3 Morrison, IL 61270	do	Do.
Roots Peat Farm	Box 6005 Lake Villa, IL 60046	do	Lake.
Perlite (expanded):			
Manville Corp	Route 6, Box 3429 Joliet, IL 60434	Plant	Will.
Silbrico Corp	6300 South River Rd. Hodgkins, IL 60525	do	Cook.
Sand and gravel:			
Construction (1986):			
R. A. Cullinan & Sons Inc	121 West Park St. Tremont, IL 61568	Pits and plants	De Witt, McLean, Peoria, Tazewell, Woodford.
Elmhurst-Chicago Stone Co	Box 57 Elmhurst, IL 60126	do	Cook, Du Page, Kane.
McHenry Sand & Gravel Co. Inc	Box 511 McHenry, IL 60050	do	Boone and McHenry.
Material Service Corp., a division of General Dynamics Corp.	300 West Washington St. Chicago, IL 60606	do	Grundy, Kane, McHenry.
Meyer Materials Co	Route 2, Box 56 Algonquin, IL 60102	do	Kane and McHenry.
Thelen Sand & Gravel Inc	28955 West Route 173 Antioch, IL 60002	Pit and plant	Lake.
Vulcan Materials Co	Box 7497 Birmingham, AL 35253	Pits and plants	Champaign, Livingston, McHenry, Macon.

See footnotes at end of table.

Table 5.—Principal producers —Continued

Commodity and company	Address	Type of activity	County
Sand and gravel —Continued			
Industrial:			
Manito Investment Co	Box 166 Tremont, IL 61568	Pit and plant	Mason.
Manley Bros. of Indiana Inc	Box 538 Chesterton, IN 46304	do	La Salle.
Unimin Corp	258 Elm St. New Canaan, CT 06840	Pits and plants	La Salle and Ogle.
U.S. Silica Co	Box 577 Ottawa, IL 61350	Pit and plant	La Salle.
Wedron Silica Co.	Box 167 Wedron, IL 60557	do	Do.
Slag—iron and steel:			
Heckett Co	612 North Main St. Butler, PA 16001	Plant	Cook.
International Mill Service Co	1818 Market St. Philadelphia, PA 19103	Plants	Cook, Madison, Peoria.
St. Louis Slag Products Co. Inc., a division of Standard Slag Co.	Box 430 Granite City, IL 62040	Plant	Madison.
Stone (crushed limestone-dolomite):			
Columbia Quarry Co	Box 128 Columbia, IL 62236	Underground mine, quarries, plants.	Johnson, Monroe, Pulaski, St. Clair, Union.
Material Service Corp., a division of General Dynamics Corp.	300 West Washington St. Chicago, IL 60606	do	Cook, Logan, Menard, Montgomery, St. Clair, Vermilion, Will.
Rein, Schultz & Dahl Inc.	5960 Falcon Rd. Rockford, IL 61109	Quarries and plants	Carroll, Douglas, Kane, Stephenson, Will.
Vulcan Materials Co	Box 7497 Birmingham, AL 35253	do	Clark, Cook, Iroquois, Kankakee, Livingston, Will.
Sulfur (recovered):			
Marathon Oil Co	Robinson, IL 62454	Plant	Crawford.
Mobil Oil Corp	Box 874 Joliet, IL 60434	do	Will.
Shell Oil Co	Box 262 Wood River, IL 62095	do	Madison.
UNOCAL Corp	1650 East Golf Rd. Schaumburg, IL 60196	do	Will.
Tripoli:			
Illinois Minerals Co., a subsidiary of Georgia Kaolin Co.	2035 Washington Ave. Cairo, IL 62914	Underground and open pit mines and plant.	Alexander.
Tammsco Inc	Box J Tamms, IL 62988	Underground mine and plant.	Do.
Vermiculite (exfoliated):			
W. R. Grace & Co., Construction Products Div.	6051 West 65th St. Bedford Park, IL 60638	Plant	Du Page.
Strong-Lite Products Corp. of Illinois	Shipyard Rd. Seneca, IL 71611	do	La Salle.

[1]Also copper, lead, silver, and zinc.

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